

Towards macrocyclic ionic liquids: novel ammonium salts based on tetrasubstituted p-tert-butylthiacalix[4]arenes

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Abstract

© The Royal Society of Chemistry. Water-insoluble ionic liquids based on p-tert-butylthiacalix[4]arenes tetrasubstituted at the lower rim with amide and quaternary ammonium groups containing alkyl, phenyl, ester, phthalimide, glycine, alanine and glycyglycine groups in cone and 1,3-alternate conformations were synthesized. It was established that macrocycles containing quaternary ammonium fragments with alkyl, phenyl and ester groups at the nitrogen atom in cone conformation melt lower by 8-31 °C than 1,3-alternate stereoisomers. It was shown that the introduction of the bis(trifluoromethylsulfonyl)imide anion as a counterion in the structure of quaternary ammonium salts based on thiacalix[4]arenes led to a substantial decrease in the melting point of the above salts.

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